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LONG-TERM OUTCOMES FOLLOWING TRANSCATHETER AORTIC VALVE IMPLANTATION: INSIGHTS ON PROGNOSTIC FACTORS AND VALVE DURABILITY FROM THE CANADIAN MULTICENTER EXPERIENCE

i2 Symposium

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Background: Very few data exist on the long-term outcomes associated with transcatheter aortic valve implantation (TAVI). The objectives of this study were to evaluate the long-term outcomes following TAVI in the Multicenter Canadian Experience study, with special focus on the causes and predictors of late mortality and valve durability.

Methods: This was a multicenter study including 339 patients considered to be non-operable or at very high surgical risk (mean age: 81 ± 8 years; STS score: $9.8 \pm 6.4\%$) who underwent TAVI with a balloon-expandable Edwards valve (transfemoral: 48%, transapical: 52%). Follow-up was available in 99% of the patients, and serial echocardiographic exams were evaluated in a central Echo Core Lab.

Results: At a median follow-up of 36 months (25th-75th IQR: 26-44 months) 146 patients (43.1%) had died. The causes of late death (110 patients, 32.4%) were non-cardiac (67%), cardiac (27%) and unknown (6%). The predictors of late mortality were chronic obstructive pulmonary disease (HR: 1.99, 95% CI: 1.34-2.95), chronic kidney disease (HR: 1.62, 95% CI: 1.09-2.41), chronic atrial fibrillation (HR: 1.82, 95% CI: 1.24-2.67) and frailty (HR: 1.76, 95% CI: 1.17-2.64). Valve hemodynamics remained stable ($p > 0.05$ for changes in mean gradient, valve area and residual aortic regurgitation up to 3- and 4-year follow-up) and no cases of structural valve failure were observed during the follow-up period.

Conclusions: More than 40% of the patients who underwent TAVI because of a high or prohibitive surgical risk profile had died at a median follow-up of 3 years. Late mortality was due to non-cardiac co-morbidities in two thirds of the patients. No deterioration in valve function was observed throughout the follow-up period. These results highlight the importance of co-morbidities and patient selection on long-term outcomes after TAVI.